

receiving the retransmitted radio wave outside the equipment and demodulating it to obtain a signal related to said parameter.

Amended
B¹
2. (Amended) A method of monitoring live electrical equipment at high or medium voltage, the method comprising the following steps;

emitting a radio wave for illuminating a zone of the equipment in radio energy close to a point where physical parameter is to be monitored;

re-emitting the received radio wave with amplitude-modulation responsive to said physical parameter crossing a threshold at said point; and

receiving the retransmitted radio wave outside the equipment and demodulating it to obtain a signal indicative of said threshold being crossed.

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4. (Amended) An apparatus for monitoring live electrical equipment at high or medium voltage, the apparatus comprising:

at least one sensor unit placed on the equipment, comprising a first radio antenna, a sensor for producing a digital signal related to a determined physical parameter at a point to be monitored, and amplitude-modulation means connected to the sensor and to the first antenna, and activated by the energy received by said antenna;

a transceiver unit placed outside the equipment and having a second radio antenna for emitting a radio wave to illuminate the first antenna, a power supply source, and signal processing means connected to the second antenna; and

the first antenna retransmitting towards the second antenna the radio wave that has been transmitted thereby, while simultaneously amplitude-modulating it in response to the output signal of the sensor, said processing means being arranged to provide a signal related to said parameter.

5. (Amended) An apparatus for monitoring live electrical equipment at high or medium voltage, the apparatus comprising:

at least one sensor unit placed on the equipment, comprising a first radio antenna, a two-state sensor responsive to a determined physical parameter at a point to be monitored, the sensor changing state when said parameter crosses a threshold, and amplitude-modulation means connected to the sensor and to the first antenna, and activated by the energy of a radio wave received by said antenna;

a transceiver unit placed outside the equipment and having a second radio antenna for illuminating the first antenna, a power supply source, and signal processing means connected to the second antenna; and

the first antenna retransmitting towards the second antenna the radio wave that has been transmitted thereby, while simultaneously amplitude-modulating it in response to the state of the sensor, said processing means being arranged to provide a signal indicative of the state of the sensor.

10. (Amended) An apparatus for monitoring high or medium voltage electrical equipment such as a three-phase distribution bay, the apparatus comprising:

at least one sensor unit per phase, the unit being placed on a live element of the equipment and comprising a first radio antenna, a two-state sensor responsive to temperature at a point of said conductor, the sensor changing state when the temperature crosses a threshold, and amplitude-modulation means connected to the sensor and to the first antenna, and activated by the energy of a radio wave received by said first antenna;

a transceiver unit placed outside the equipment and having a second radio antenna for illuminating the first antenna, a power supply source, and signal processing means connected to the second antenna; and

the first antenna retransmitting to the second antenna the radio wave transmitted by the second antenna together with amplitude-modulation in response to the state of the sensor and to information identifying the sensor, said processing means being arranged to supply, for each sensor unit, a signal $\text{sgn}(12)$ indicative of the state of the sensor together with associated identity information $\text{Id}(12)$.
